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WIì 5 f Ë"Þ Y ÚFûlì+° b

 $F F U^{1} Kt^{2} \tilde{a}^{1} !' L^{1} E\dot{a} > <^{2} z8 \div 2$

1.		,	,	, 100871;
2.	,	621900; †	, E-mail: qdchen@pku.edu.cn (), xshen@pku.edu.cn ()
">-			, Na ₂ CO ₃	
	,			

 CO_3^{2-}



* 1 •6&5Ë & dKp | Å+° 4 <C 3ë Fig. 1 Preparation of PP adsorbents containing amidoxime group

Table 1 Characterization of the PP- g -AN/AA and PP- g -AN/AAm						
	/0/	/%		-1	/0/	
	/ %0	Ν	С	Н	- _{AN} /(mmol · g ·)	/%
PP-g-AN/AA	90	4.82	70.65	10.05	3.43	71
PP-g-AN/AAm	67	9.00	71.44	10.89	3.07	91

=	-"	1	PP- <i>g</i> -AN/AA	PP- <i>g</i> -AN/AAm
Table 1		Cha	aracterization of	the PP-g-AN/AA and PP-g-AN/AAm

1.4 -ßF¤lÌ#â"Þù9/M Wlì5fË"Þ

 $UO_2(NO_3)_2{\cdot}6H_2O \qquad 30\% \label{eq:uo2}$ TBP-

5 mg/L (), Na₂CO₃ , 25°C 8000 r/min , ,

ICP-AES

$$E(\%)$$
 (1) :

$$E = \frac{C_{\rm e}}{R \times C_0} \times 100,\tag{1}$$

 C_0 (mg/L); C_e (mg/L); R

1.5 •6&5Ë & dKp | Å T M ù9/!`,\$ Y % lì+° dKp ÊO

20~120 mg/L NH₄[UO₂(CO₃)₃] (Na₂CO₃ 3 mmol/L ,) 25 °C ICP-AES

 $Q(\text{mg/g}) \qquad (2) \qquad :$ $Q = \frac{(C_0 - C_e)V}{W}, \qquad (2)$

$$E(\%)$$
 (3) :

$$E = \frac{C_0 - C_e}{C_0} \times 100,$$
 (3)

, C_0 (mg/L); C_e (mg/L); V (L); W (g)

2 3ÿÈ:@Ô@æ 2.1 ù9/ÔÇ'

2.2 $-\beta F |\dot{a}|^{2} + \circ |\dot{b}|^{2} \dot{b} + \circ |\dot{b}|^{2} \dot{b} |\dot{b}|^{2} \dot{b}$

R = 2, $[CO_3^{2^-}] = 4$ mmol/L, $[UO_2^{2^+}] = 5$ mg/L

* 2 "K %-ßF¤lÌ#â"Þ ù9/ 5 f,\$ Ylì+° • ù

Fig. 2 Effect of time on the stripping of UO₂²⁺ from organic phase by sodium carbonate solution

$$\begin{array}{cccc} UO_2(CO_3)_2^{2-} & UO_2(CO_3)_3^{4-} & & \\ & & CO_3^{2-} & , \\ , & CO_3^{2-} & & UO_2^{2+} \\ ; & & CO_3^{2-} & , \\ UO_2^{2+} & , & \\ \end{array}$$

 Na_2CO_3 3 Na_2CO_3 0 (),

 $\begin{array}{cccc} 40\%; & Na_2CO_3 & (0.1{\sim}0.5 \\ mmol/L, & Na_2CO_3 & UO_2{}^{2+} \\ 10) & , \ Na_2CO_3 & TBP- \\ UO_2{}^{2+} & 90\%; & Na_2CO_3 \end{array}$

 $\begin{array}{ccc} (1{\sim}5 \mbox{ mmol/L}, & Na_2CO_3 \\ UO_2{}^{2+} & 20) &, \ Na_2CO_3 \\ TBP- & UO_2{}^{2+} & 90\% \end{array}$

2,
$$Na_2CO_3$$
 UO_2^{2+}
20

, **2.3** ,\$! % ù9/+° • ù CO₃^{2−}

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2.4 F3Ó9/

8, $5 \text{ mg/L}, \text{ Na}_2\text{CO}_3$ 16 mmol/L, , , , 99% Na_2CO_3 ; , , Na_2CO_3 ; , 0.05 mg/L,

2.5 [8•EK(³ % dKpDó/7+[°] • ù

5 , , , UO_2^{2+} ; ,

2.6 dKp Ô Ç ' ö dKp åFû

, Q t , , , PP-g-AO/AA , 12 ; PP-g-AO/AAm , 8

12 7





* 5 [8•EK(³ % •6&5Ë & dKp | Å dKp+° • ù
 Fig. 5 Effect of oscillation rate on the adsorption of UO₂²⁺ by AO-based adsorbents

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Na₂CO₃

8

Na₂CO₃

PP-g-AO/AAm

, PPg-AO/AA PP-g-AO/ AAm , CO₃²⁻

,
$$CO_3^{2-}$$
 UO_2^{2+} ,
 $[CO_3^{2-}] = 9 \text{ mmol/L}$
, PP-g-AO/AA 95%;
 CO_3^{2-} ,
PP-g-AO/AAm ,
 CO_3^{2-} 25 %
, PP-g-AO/AAm CO_3^{2-} ,
: Na₂CO₃

 UO_2^{2+} 30, PP-g-AO/AAm ; Na₂CO₃ UO_2^{2+} 20~ 30, PP-g-AO/AA

2.8 dKp | Å «*TFû % dKp+° • ù

	CO_{3}^{2-}	UO_2^{2+}		10~90
, PP- <i>g</i> -AO/A	AAm		$U{O_2}^{2+} \\$	
25%	,			90%
		,		PP-
g-AO/AA				9

PP-g-AO/AAm



m = 30 mg, [U(VI)]=25 mg/L, *V*=10 mL

* 8 M ù9/!`,\$ Y-ßF¤IÌ#â"Þ"• Ò % •6&5Ë & dKp | Å dKp S6)+° • ù

Fig. 8 Effect of the concentration of sodium carbonate solution on the adsorption of $UO_2^{2^+}$ from aqueous solutions by AO-based adsorbents

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* 10 PP-g-AO/AAm dKp | Å+°Fù 9 U*T S
 Fig. 10 The recyclable performance of the PP-g-AO/AAm adsorbents



CO3²⁻,







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